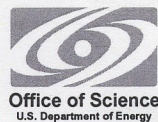


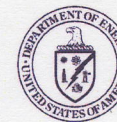
Injector Diagnostic Upgrade Linac Flag Stations #106

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Office of Science Laboratory
Operated by The University of Chicago*



Project: Inj Diag Upgrade - Linac Flag Stations

Objective: Design and implement three beam profiling stations in linac sector L2. These systems would allow characterization of the L2 lattice for beam matching and beam optimization into the chicane, L2.

Background Information:

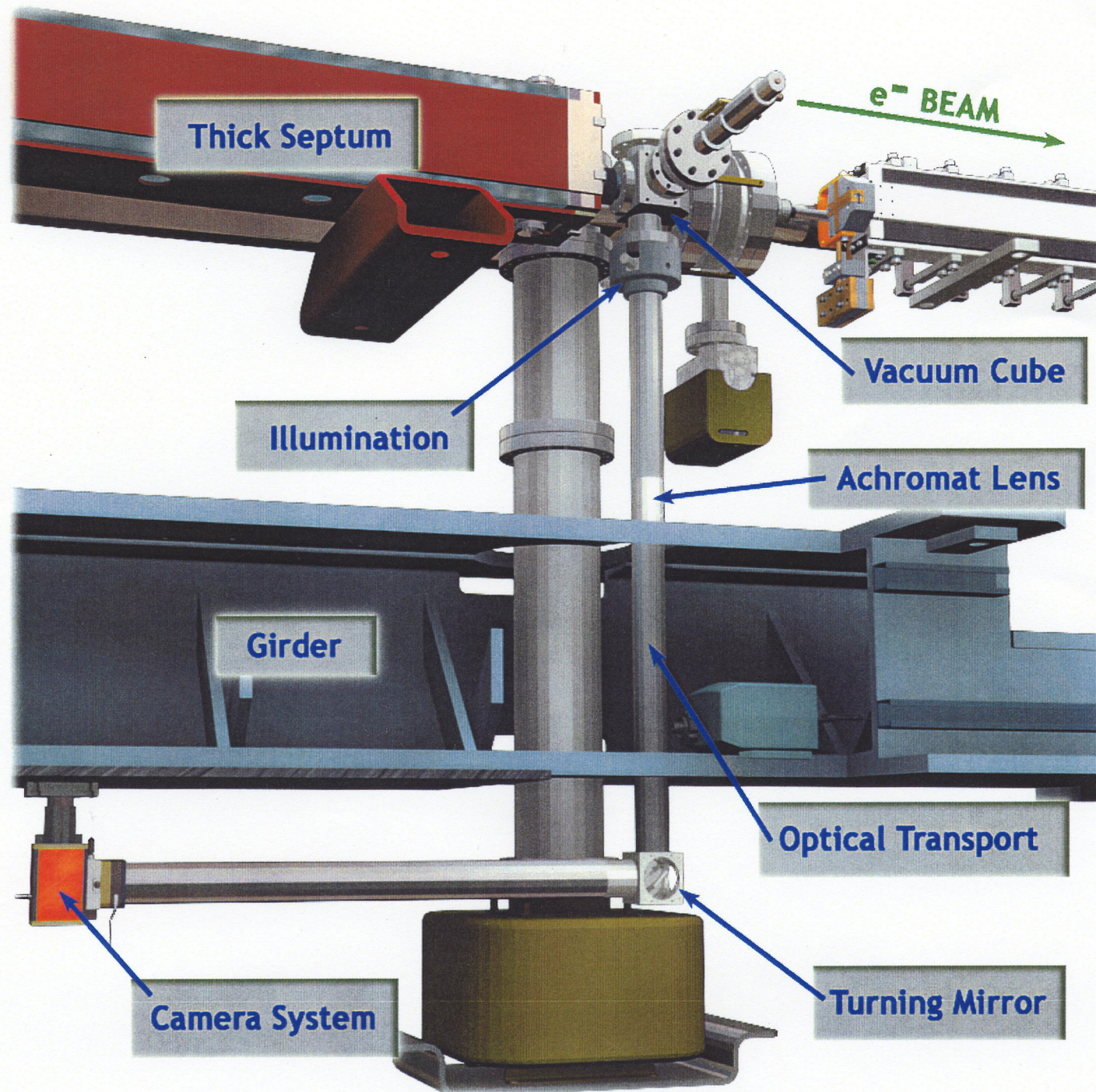
- **New Initiative**
- **Single Year Funding**
- **High/Medium Priority**

Justification: This upgrade would significantly improve studier and operation's ability to quantify and deliver consistent beam quality for machine studiers and operations.

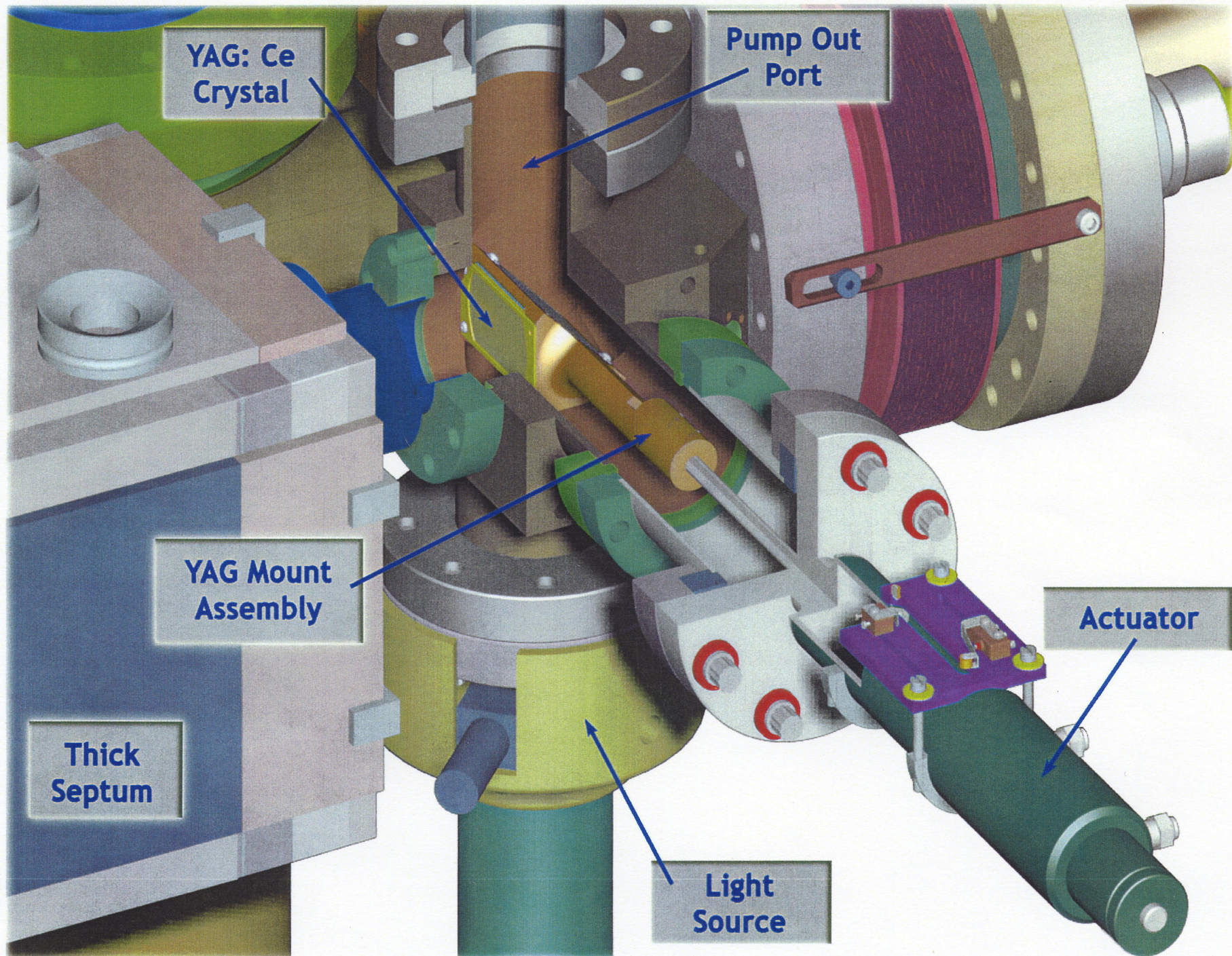
Consequence: OAG is currently unable to accurately analyze and setup the linac L2 magnetic lattice for proper beam matching into the chicane. This is a significant drawback to operations and beam studies for all operating modes of the machine.

Cost: **FY05 Cost Noneffort: \$162k**
 FY05 Total w/effort: \$218k

SR Sector 39 Flag

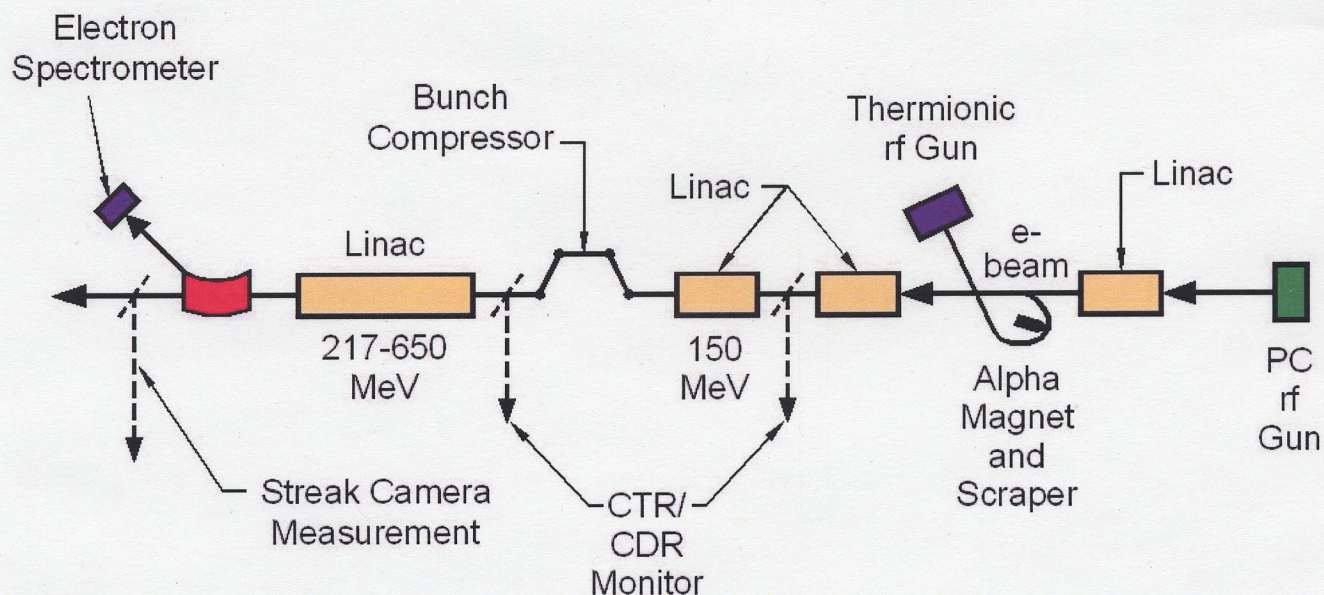


SR Sector 39 Flag



Inj Diag Upgrade – Linac Flag Stations

APS Linear Accelerator



Inj Diag Upgrade – Linac Flag Stations

Benefits:

- **Empirically study and quantify the L2 lattice.**
- **Improved beam transmission, emittance, energy spread.**
- **Rapid rematching of the RF Guns to the linac.**
- **Characterize BPM linearity, intensity dependence, and absolute position.**
- **Developing the injector gun upgrade program.**
- **Provides short bunch length CTR diagnostic.**